

A prospect of using *Vibrio harveyi* isolated from the intestine of healthy farmed Tiger Grouper, *Epinephelus fuscoguttatus* (Forsskal, 1775) as probiotics

ABSTRACT

Two bacterial strains *Vibrio harveyi* JAQ01 and JAQ02 isolated from the intestine of farmed Tiger Grouper (*Epinephelus fuscoguttatus*) were studied to illustrate their in vitro characteristics as probiotics. Phenotypic characterization of the test strains was performed following a standard physiological test aided by commercial identification kits. A comparative phenotypic data between the test strain and a reference strain *V. harveyi* ATCC35084 was generated. These bacterial strains were eventually designated as *V. harveyi* JAQ01 and JAQ02 following 16S rRNA gene sequences analysis. Both strains were successfully exhibited a significance level of inhibition of target strains using a modified bacteriocin-like inhibitory substance (BLIS) method to fulfill their functional requirement as probiotics. Assessment on the safety aspects regarding their haemolytic activity and antibiotic resistance profile completed this study. Our investigation revealed the presence of two antagonists *V. harveyi* that may play a role in diseased control of farmed *E. fuscoguttatus*. This is the first report made to assess in vitro characterization of intestinal *V. harveyi* of farmed *E. fuscoguttatus* suggesting the prospect of using *V. harveyi* JAQ01 and JAQ02 in aquaculture is worth an advance research.

Keyword: 16S rRNA gene; Antagonist; *Epinephelus fuscoguttatus*; *Vibrio harveyi*; Probiotics